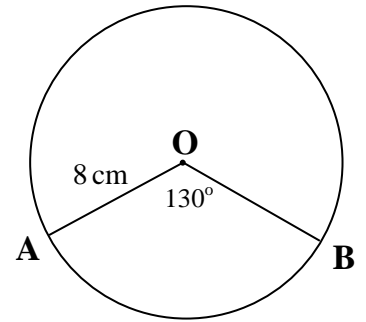


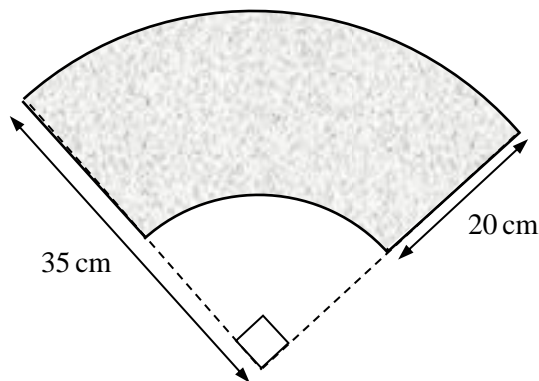
Mathematics (National 5) USAP 1(b) Homework – Ink Exercise

1. (a) Find the length of the minor arc AB in this circle. (3)

- (b) Calculate the area of the minor sector AOB. (3)



2. Ornamental paving slabs are in the shape of part of a sector of a circle. Calculate the area of the slab shown.



(5)

3. A line passes through the points A(-2, -4) and B(8, 1).

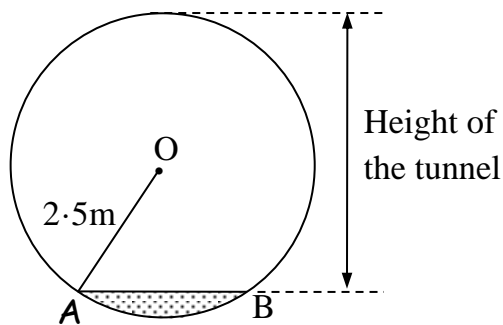
Find the gradient of the line AB.

(2)

4. Prove that the points A(0, -2), B(-4, 4) and C(6, -11) all lie on the same straight line. (3)

5. The points S(k, 3), T(10, 2) and U(-2, 5) are collinear. Find the value of k. (4)

6.

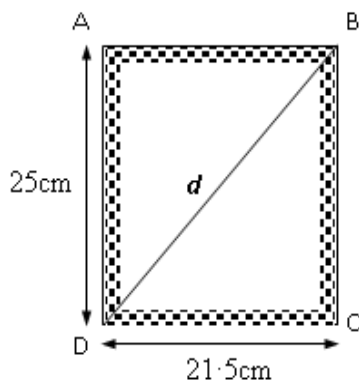


The figure shows the cross section of a tunnel with a horizontal floor AB which is 2.4 metres wide.

The radius OA of the cross section is 2.5 metres.

Find the height of the tunnel. (4)

7. Calum is making a picture frame, ABCD .



It is 25 cm high and 21.5 cm wide.

To check whether the frame is rectangular, he measures the diagonal, *d*.

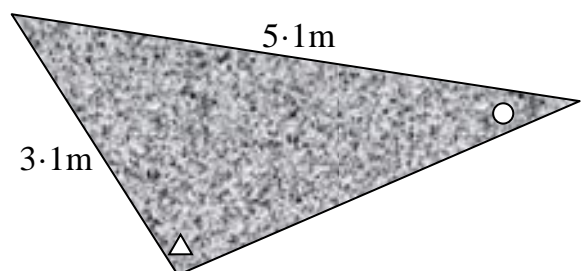
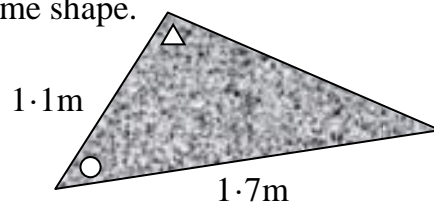
It is 31.5 cm long.

Is the frame rectangular?

(4)

8. I have two triangular plots in my garden which I have had turfed.

The diagrams below show plans of both areas. Equal angles are marked with the same shape.



The cost depends on the area being tiled.

It cost £16.75 to buy turf for the smaller area. How much did it cost for the larger one if the triangles are mathematically similar?

(3)

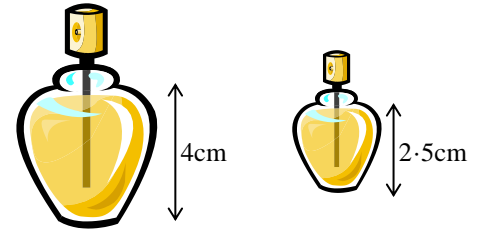
Mathematics (National 5) USAP 1(b) Homework – Ink Exercise

9. These two perfume bottles are mathematically similar.

The cost depends on the volume of perfume in them.

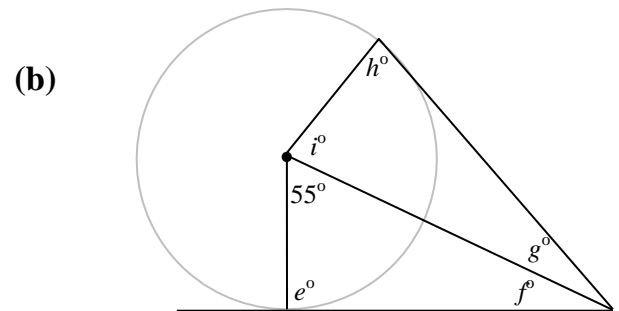
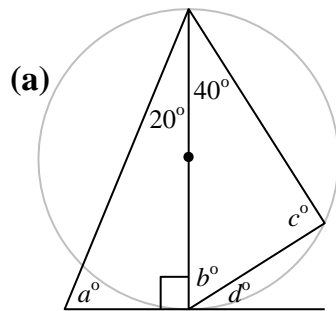
The larger bottle costs £62.

Find the cost of the smaller bottle correct to the nearest penny.



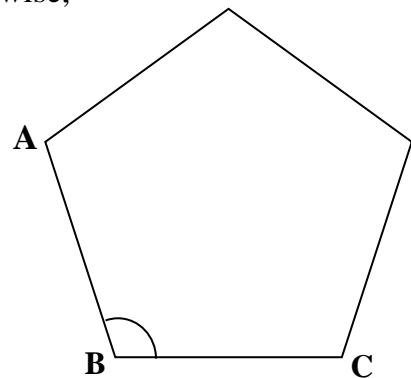
(3)

10. Calculate the sizes of the missing angles in each diagram.



(4)

11. By dividing the pentagon into triangles or otherwise, find the size of angle ABC.



(2)

Total – 40 marks